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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/522,026	04/26/2005	Goran Johansson	003301-217	1556
21839	7590	05/05/2006	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			HASHMI, ZIA R	
			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 05/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/522,026	Applicant(s) JOHANSSON ET AL.	
	Examiner Zia R. Hashmi	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 19-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 19-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>4/26/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-12 and 19-29 are rejected under U.S.C. 103(a) as being unpatentable over Hertz et al. (6,002,744), in view of Hertz et al. (6,760,406).

3. With respect to independent claim 1, Hertz et al. disclose a method of generating x-ray or EUV radiation (Abstract, line 1, col. 2, lines 27-30, col. 6, claim 1, and Fig. 2), comprising the steps of: (i) urging a target material through an orifice from an input end to an output end, the target material exiting in liquid state into an interaction chamber (col. 2, lines 27-30, col. 4, lines 4-9, col. 6, claim 7, 4 & 17 in Fig. 2), such that a target jet is formed in the interaction chamber and (ii) directing at least one energy beam onto the target jet, the energy beam interacting with the target jet in the interaction chamber to generate the x-ray or EUV radiation (Abstract, lines 3-15, col. 6 claim 1 & 7, and 17 in Fig. 2), wherein the target material exit through an orifice at the output end (Abstract, lines 1-8, col. 2, lines 42-47, col. 3, lines 8-13 & 59-64, col. 6, claims 1-7, and 11 in Fig. 2).

4. With respect to independent claim 6, Hertz et al. also disclose an arrangement for generating x-ray or EUV radiation, comprising: a source of target material (col. 3, lines 61-62); an interaction chamber (4 in Fig. 2); an energy source for generating an

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energy beam (col. 3, lines 60-62 and 3 in Fig. 2); an orifice having an opening into the interaction chamber (10 in Fig. 2); means for urging target material from the source of target material out through the orifice in a liquid state to form a target jet in the interaction chamber col. 4, lines 7-9 and 14, 10 in Fig. 2); and means for directing the energy beam from the energy source onto the target jet to interact with the same, thus producing x-ray or EUV radiation (col. 3, lines 59-64, col. 4, lines 28-39, col. 6, claim 7, and 3 & 11 in Fig. 1 & 2).

5. With respect to claims 1-12 and 19-29, Hertz et al. fail to disclose in their patent (6,002,744) a method wherein the target material is in a gaseous state. Hertz et al., however, disclose in another patent (6,760,406) a method and apparatus of generating x-ray or EUV radiation (Abstract, lines 1-5, col. 8, claim 1&2, and Fig. 1) wherein the target material is in gaseous state at the input end and wherein the target material is condensed during its propagation from the input end to the output end to exit through the orifice (col. 2, lines 10-24 & 60-63 and col. 4, lines 49-51).

Thus, it would have been obvious to one having ordinary skill at the time of the invention was made to combine methods and apparatus of Hertz et al. as disclosed in above-mentioned patents, and add features like a allowing the liquid to be forced through a capillary tubing, because Hertz et al. teach (U.S. patent No: 6,002,744, col. 1, lines 16-18) that soft x-ray sources of high intensity are applied in many fields, for instance, surface physics, material testing, crystal analysis, atomic physics, lithography and microscopy.

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Conclusion

6. Hartlove et al. disclose (6,933,515) a laser-produced plasma EUV light source, which uses a nozzle and a capillary tube for passage of liquid target stream.
7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact Electronic Business Center (EBC) at 866-217-9197 (toll-free).
8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zia Hashmi whose telephone number is (571) 272-2473. The examiner can normally be reached between 8.30 AM- 5 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477.

Zia Hashmi

April 19, 2006


JOHN R. LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800